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| EXAMINER |
|---|
| SNYDER, DAVID A |

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DATE MAILED: 11/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on <u>07 November 2002</u> .

2a)☒ This action is **FINAL**.    2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) <u>1-14</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-14</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>07 November 2002</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

| | |
|---|---|
| 1) ☒ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) ☐ Notice of Informal Patent Application (PTO-152) |
| 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . | 6) ☐ Other: |

## DETAILED ACTION

### *Drawings*

1.    The corrected or substitute drawings were received on 4 Nov 2002. These drawings are acceptable.

### *Response to Arguments*

2.    Applicant's arguments filed 4 Nov 2002 have been fully considered but they are not persuasive. The following is a response to Applicant's arguments.

As regards pg. 12, ¶7, lines 6 – 8, the reference of Maebayashi (USPN 5,450,589) teaches the reinstallation or upgrading of firmware software, but does not expressly disclose the reinstallation or upgrading of a disk drive firmware software package. However, Machado (USPN 5,255,136) does disclose the reinstallation or upgrading of a disk drive software package. It is well known in the art that the reinstallation or upgrading of a firmware software package, whether the disk drive of Machado or another firmware software controlled hardware peripheral, by means of Maebayashi is prudent, necessary, or required. To believe that the reinstallation of a SCSI firmware package is not taught, given the art of record, then a new version number would be need to be issued each time a reinstallation is needed. There is no indication the reference teaches this unusual business practice.

As regards pg. 13, ¶1, lines 5 – 13, the choosing of a single or dual two-dimensional array is well known in the art. The array, one- or two-dimensional, whether in a single or dual configuration, is merely a data-structure. And data-structures are inherent in the computer programming arts or the implementation of hardware on a computer system.

As regards pg. 13, ¶3, Ghia (USPN 5,883,852) is not suggested in the rejection of claim 2 because the functionality of Ghia as a data-structure is applied to claim 1 and therefore does not need to be reiterated in the rejection of claim 2.

As regards pg. 13, ¶4, Maebayashi does teach the checking of the pre-existing firmware version.

As regards pg. 13, ¶5, the Central Processing Unit (CPU) of a computer, as is well known in the art, can handle data greater than 393,216 bytes. However, the claims of the Applicant do not disclose the CPU dispatching Read and Write commands of any size to a targeted disk controller. The rejection is not to the CPU and the number of bytes, even if they were specified in the claims, dispatched to a targeted disk controller. The rejection is to the buffering of the firmware in memory. The Applicant's assertion that the datafile is stored in a logical array as being unique is not persuasive. The creation and populating of an array is well known in the art.

As regards pg. 14, ¶1, the Applicant is imposing an overly restrictive interpretation to Maebayashi in view of Machado and Ghia. The application of a firmware program, whether an upgrade or re-application of the existing firmware program, is well known in the art. The Examiner notes that the art of record does not limit the user to only installation of a new version of the firmware program. The Applicant is attempting to limit the referenced art such that re-application of a firmware program could not be done. The referenced art does not show such a limitation and is contrary to the state of practice as argued above.

As regards pg. 15, ¶1, the Applicant is imposing a restrictive interpretation of Maebayashi in view of Machado. The referenced art does not specifically mention that the disk drive or servo firmware have to be of the same version. The referenced art would allow version discontinuity between disk drive and servo firmware.

As regards pg. 15, ¶2, the loading of a datafile into memory is well known in the art. The temporary storage of datafile(s) before further processing/manipulation is well known in the art. If the user wishes to compare version information for a possible firmware package with that of the present targeted peripheral firmware package, as is delimited as being done in Claim 7, then the datafile would have to be partially or wholly loaded into memory. The Maebayashi does teach/disclose the firmware package being loaded into memory (Fig. 13B).

As regards pg. 15, ¶3, the Applicant claims no benefit from writing the disk drive and servo firmware to two flash PROMs, whereas the IBM Technical disclosure does claim a benefit for employing and using two flash PROMs.

As regards pg.16, ¶2 and 3, the inherent nature of a CPU, or more precisely the program executing on a CPU, to recognize the number of bytes to be downloaded is present in the TCP/IP BSD (Berkeley) Sockets command, **recv()**. The return value for a **recv()** call is "the number of bytes received . . . ." (FreeBSD System Calls Manual – recv, "Return Values"). The same return value is applicable to the **read()** function (FreeBSD System Calls Manual – read, "Return Values") which can also read from a BSD (Berkeley) Socket.

As regards pg. 16, ¶4, as the Applicant knows, the CPU merely runs

threads/processes as directed to by the operating system's (OS) task manager. All

applications execute through the CPU. The "freeing up" of the CPU is entirely

dependent on the OS's task manager (assuming the OS is a multi-tasking environment).

Therefore, it is unclear to the Examiner how the CPU, or more precisely a program

executing on the CPU, could be "unaware" of what it (or a child process or thread) is

doing. The suggestion that an application executing on a CPU would not be aware of or

monitoring, or that the OS was not aware of or monitoring, the downloading of a program

appears to be in error and not supported by the disclosure.

As regards pg .17, ¶1 and 2, the buffering of data is well-known in the art. The

inherency of declaring, sizing, loading, and reading an array is shown in Stroustrup

(Stroustrup, C.7.2).

As regards pg. 17, ¶4, the World Wide Web, as defined by the Microsoft

Computer Dictionary, is a "total set of interlinked hypertext document residing on HTTP

servers all around the world" (Microsoft Computer Dictionary, pg. 511). The Internet, of

which the World Wide Web is merely a service, is defined as a "[t]he worldwide

collection of networks and gateways that use the TCP/IP suite of protocols to

communicate with one another" (Microsoft Computer Dictionary, pg. 258). Therefore,

the Examiner sees no distinction between the Stupek reference (USPN 5,809,287), which

provides for reaching the Internet, and the World Wide Web as the repository of the

firmware package as stipulated in the Applicant's claim. And, as pointed out in the initial

Office Action, a skilled practitioner would turn to the Internet in order to download a new firmware package.

As regards pg. 19, ¶3, if the Applicant's invention is to the application of firmware to SCSI target controllers, it follows, therefore, that the Applicant is incorporating the SCSI standard (i.e. SCSI-1, SCSI-2, Fast SCSI, etc.). And the SCSI standard provides for and incorporates an INQUIRY command in order to interrogate a targeted SCSI controller. If the targeted controller is based on a non-SCSI, proprietary standard, the title and purpose of the Applicant's invention should be changed. If, however, the Applicant's invention incorporates the SCSI standard, then the Applicant's argument is without merit.

As regards pg. 20, ¶4, the Examiner would refer the Applicant to the remarks regarding pg. 15, ¶3, above.

As regards pg. 20, ¶6, the Examiner would refer the Applicant to the remarks regarding pg. 17, ¶2, above.

As regards pg. 21, ¶6, the non-automated (human-driven) practice of using a web-browser or ftp program (the "interface") to download programs, firmware packages or otherwise, is well-known in the art. The non-automated (human-driven) practice of installing, re-installing, or upgrading a piece of software is also well-known to the art. The Stupek reference in combination with the Maebayashi reference is none other than an automation of this process that was and can be carried out by the user. The Examiner takes note that the Applicant takes issue with the combination of Stupek with

Maebayashi, but the Examiner also notes that the Applicant puts forth no technical

arguments to refute the rejection of the claim based on Maebayashi and Stupek.

As regards pg.22, ¶2, the Examiner "extrapolates" nothing. The selecting of and

storage in memory of a datafile is well known in the art. As will be noted in Gilbert

(USPN 5,590,356), the use of malloc() is used for the selection of memory Gilbert, col.

22, lines 19 – 22; col. 26, lines 39 – 42; and col. 30, lines 24 – 27).

As regards pg. 22, ¶6, it is well-known in the art that there is a need to update

firmware (as taught by Maebayashi) It is also well-known in the art to access the Internet

for the downloading of firmware updates via the World Wide Web or FTP (as taught by

Stupek). The storage of downloaded firmware in to a memory array is also well-known

in the art (as taught by Stroustrup). And the specific need to query and update a SCSI

controller by means of SCSI commands is also well-known in the art (as taught by the

ANSI SCSI standard). Therefore, the combination of the above elements is sound

motivation for one of ordinary skill in the art.

As regards pg. 23, ¶1, if the Applicant's invention <u>does</u> incorporate the SCSI

standard, then the *SCSI* command to query the version number of the *SCSI* targeted

controller should be sufficient to accomplish this end. The Applicant advances no

technical reason why the SCSI standard query command (INQUIRY), as based on the

ANSI SCSI-2 standard X3.131-1994, should not be used.

As regards pg. 23, ¶3, the selection of memory, in array or other data-structure

form, is well known in the art. The Examiner would refer the Applicant to the arguments

regarding pg. 15, ¶2.

As regards pg. 24, ¶1, the references, as cited, teach the version checking of the

pre-existing firmware.

As regards pg. 24, ¶4, as noted above, the Applicant is claiming to be modifying

the firmware of a *SCSI* targeted controller. Therefore, it follows that the standard *SCSI*

INQUIRY command should be used. The Applicant advances no technical reason for <u>not</u>

using the ANSI SCSI INQUIRY command.

As regards pg. 25, ¶1 – 3, the Applicant's invention is for the modification,

updating, or re-installation of firmware to a SCSI targeted controller. The inclusion of

the SCSI standard in the specification and claims, therefore, allows the Examiner to use

the SCSI standard in rejecting claims based on this material. If the SCSI standard

commands are not to be used in rejecting claims based on the SCSI standard, the

Applicant should show to the Examiner why that is.

As regards pg. 26, ¶1 – 2, the reference, as cited, teaches the "downloading" and

"passing of firmware data" to the targeted controller.

As regards pg. 26, ¶3, the reference, as cited, teaches the "sense" of a SCSI disk

drive. The SCSI standard also specifies the command REQUEST SENSE (ANSI SCSI-2

standard, section 8.2.14) and the sense key (ANSI SCSI-2 standard, section 8.2.14.3)

"5h" for an 'Illegal Request'. The SCSI reference should be taken as a whole.

3.      The rejections which follow are in response to Applicant's amended claims 1 – 14.

a.      Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Maebayashi et al., in view of Machado et al., and further in view of Ghia et al.

As per claim 1, Maebayashi et al. teaches/discloses a "source means" (Maebayashi et al., "modification data", col. 4, lines 47-54). Maebayashi et al. does not does not expressly disclose that the source means for a SCSI peripheral has a SCSI disk drive firmware and SCSI servo firmware. However, Machado et al. discloses the use of disk drive firmware and servo firmware (Machado et al., "hardware dependent section 502" and "servo section 504", col. 30, lines 10-29 and fig. 14). Thus, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to enclose the SCSI disk drive firmware and SCSI servo firmware of Machado et al. in the source means of Maebayashi et al. for a SCSI controller or peripheral. One of ordinary skill in the art would have been motivated to update a SCSI targeted peripheral;

Maebayashi et al. teaches/discloses the use of a "central processing unit" (Maebayashi et al., "processor", col. 16, lines 14-23) and the use of "temporary storage" for storing firmware (Maebayashi et al., fig. 1, item 11). Maebayashi et al. does not expressly disclose that the "central processing unit should have selection means for choosing single or dual two-dimensional array". However, Ghia et al. discloses the selection means for choosing a single or dual two-dimensional array (Ghia et al., col. 1, lines 32-48). Thus, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to allow selection of one or two arrays in order to expand the memory space available for the storage of the source means or the separate storage of two

different source means. One of ordinary skill in the art would have been

motivated to do this for the above reasons;

Maebayashi et al. also teaches/discloses, "a means for temporarily storing

different versions of said firmware" (Maebayashi et al., col. 17, lines 23-27 and

47-50);

Maebayashi et al. also teaches/discloses, "a means for checking the pre-

existing firmware in said target controller" (Maebayashi et al., col. 14, lines 45-

50).

b.      Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Maebayashi et al., in view of Machado et al., and further in view of IBM Technical

Disclosure Bulletin vol. 37, issue 10, pages 181-186 (hereafter referred to as the IBM

Disclosure).

As per claim 4, Maebayashi et al. teaches/discloses a "source means"

(Maebayashi et al., "modification data", col. 4, lines 47-54). Maebayashi et al.

does not does not expressly disclose that the source means for a SCSI peripheral

has a SCSI disk drive firmware and SCSI servo firmware. However, Machado et

al. discloses the use separate disk drive firmware and servo firmware (Machado et

al., col. 30, lines 10-29). Thus, at the time the invention was made, it would have

been obvious to a person of ordinary skill in the art to enclose the SCSI disk drive

firmware and SCSI servo firmware of Machado et al. in the source means of

Maebayashi et al. for a SCSI controller or peripheral. One of ordinary skill in the

art would have been motivated to do this for the fact that if one were updating a

SCSI targeted peripheral the disk drive and servo firmware should be of the same version;

Maebayashi et al. also teaches/discloses the "central processing means for receiving said firmware . . . and utilizing a local memory" (Maebayashi et al., "modification data . . . is transferred . . . to one of the processors . . . . [and] held in a memory", col. 7, lines 66-68 to col. 8, lines 1-5). Maebayashi et al. does not expressly disclose the use of local memory for storage of the SCSI firmware and SCSI servo firmware. However, Machado et al. also discloses the use of separate disk drive firmware and servo firmware (Machado et al., col. 30, lines 10-29). Thus, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to store the modification data of Machado et al. to be applied to a SCSI targeted peripheral in local memory of Maebayashi et al. One of ordinary skill in the art would have been motivated to do this for comparisons with the current SCSI firmware version present on the targeted SCSI peripheral;

Maebayashi et al. teaches/discloses a, "connection means from . . . memory . . . to a plurality of disk drives . . . ." (Maebayashi et al., "I/O bus", col. 6, lines 18-26);

Maebayashi et al. also teaches/discloses the "peripheral controller" (Maebayashi et al., "adaptor", col. 8, lines 31-36). Maebayashi et al. does not does not expressly disclose the use of two flash PROMs. However, the IBM Disclosure discloses the use of two separate Flash PROMs (IBM Technical Disclosure Bulletin vol. 37, issue 10, pages 181-186, ¶ 2). Thus, at the time the

invention was made, it would have been obvious to a person of ordinary skill in the art to combine the two Flash PROMs of the IBM Disclosure with the peripheral controller of Maebayashi et al. One of ordinary skill in the art would have been motivated to do this to provide for backup of data storage methods if one failed, or the physical separation of two data packages to two memory areas;

Maebayashi et al. also teaches/discloses the "means to Write" to the "peripheral controller" (Maebayashi et al., "transferred" and "adapter", col. 12, lines 43-45).

As per claim 6, as applied to claim 4 above, Maebayashi et al. does not expressly disclose a "means for recognizing the number of bytes of firmware to be downloaded". It would have been clear that the "means for recognizing the number of bytes of firmware to be downloaded" by the central processing is an inherent function of the central processing and supporting computer hardware/software;

Maebayashi et al. also does not expressly disclose a means for "selecting a buffer array size . . . ." It would have been clear that the "selecting [of] a buffer array size ... [for the] number of bytes to be downloaded" by the central processing is an inherent function of the central processing and supporting computer hardware/software.

c.      Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maebayashi et al., in view of Machado et al., and the IBM Disclosure, as applied to claim 4 above, and further in view of Stupek et al.

Maebayashi et al. does not expressly disclose the use of the World Wide

Web as the source of the firmware update means. As a means of reference, the

World Wide Web can also be described as a worldwide collection of networked

computers accessible through an on-line service provider. However, Stupek et al.

discloses the use of an on-line service provider for the obtaining of a replacement

or upgrade firmware data (Stupek et al., col. 10, lines 49-50). Thus, at the time

the invention was made, it would have been obvious to a person of ordinary skill

in the art to obtain the necessary replacement or update firmware data of

Maebayashi et al. via the World Wide Web by means of the on-line service

provider of Stupek et al. One of ordinary skill in the art would have been

motivated to do this due to the tendency of users to lose/misplace installation or

upgrade disks, the ready accessibility of the information, and the likelihood that a

piece of device software will be at its newest version due to the ease of product

dissemination via the World Wide Web.

d.      Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Maebayashi et al., in view of Machado et al., and the IBM Disclosure, as applied to claim

4 above, and further in view of the American National Standards Institute's (ANSI)

SCSI-2 standard, X3.131-1994 (hereafter referred to as the ANSI X3.131-1994 standard).

Maebayashi et al. does not expressly disclose the identification inquiry

means of a target controller as set forth. However, the ANSI X3.131-1994

standard discloses the means to query a target controller (ANSI X3.131-1994

standard, clause 8, section 2.5). Thus, at the time the invention was made, it

would have been obvious to a person of ordinary skill in the art to use the

INQUIRY command of the ANSI X3.131-1994 standard in order to ascertain

identification and version information about a targeted controller of Maebayashi

et al. One of ordinary skill in the art would have been motivated to do this in

order to ensure the upgrade data would not be applied to a non-compatible

controller or a newer firmware software version;

Maebayashi et al. teaches/discloses the "version of firmware [which] will

be downloaded to said target controller" (Maebayashi et al., col. 14, lines 45-50).

e.     Claims 8, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Maebayashi et al. in view of Ghia et al. and further in view of further Stupek et al.

As per claim 8, Maebayashi et al. teaches/discloses the "source means" for

the "microcode firmware" (Maebayashi et al., "modification data supply unit" and

"modification data", col. 2, lines 19-24);

Maebayashi et al. teaches/discloses the "processor . . . for receiving and

buffering . . . firmware" (Maebayashi et al., col. "modification storage unit", col.

1, lines 60-68 and col. 2, lines 1-10). Maebayashi et al. does not does not

expressly disclose, "having a first and second two-dimensional buffer array".

However, Ghia et al. does disclose a two-array memory formation (Ghia et al.,

fig. 2). Thus, at the time the invention was made, it would have been obvious to a

person of ordinary skill in the art to use either the two physically separated arrays,

or two memory allocated buffers, of Ghia et al. with the processor of Maebayashi

et al. One of ordinary skill in the art would have been motivated to do this to

ensure that the survivability of firmware in the case of catastrophic failure during

the update process, or in order to increase the amount of memory available to the

firmware update package;

Maebayashi et al. also teaches/discloses the, "means for transferring . . .

firmware onto a . . . targeted peripheral controller . . . ." (Maebayashi et al., col.7,

lines 41-56);

Maebayashi et al. does not expressly disclose an "interface" program,

whether library exported or otherwise. However, Stupek et al. discloses the use of

an interface program for issuing a download request and querying a target

controller (Stupek et al., col. 12, lines 29-43). Thus, at the time the invention was

made, it would have been obvious to a person of ordinary skill in the art to create

such an interface program of Stupek et al. for the system of Maebayashi et al.

One of ordinary skill in the art would have been motivated to do this to carry out

the task of instructing the central processing unit (CPU) to download a firmware

update, telling the CPU to store the firmware update in temporary storage if

necessary, coordinating the firmware update data move from the CPU to the

targeted controller, and querying the targeted controller;

Maebayashi et al. teaches/discloses the means to access the firmware

"release number" whereby the appropriate firmware could be selected

(Maebayashi et al., "version", col. 14, lines 45-50);

Maebayashi et al. also does not expressly disclose a, "means for selecting

the appropriate size of . . . array . . .[to] store said . . . firmware." It would be

clear that the combination of elements set forth above would enable the processor

to select the appropriate size memory array for the storage of the firmware.

As per claim 10, as applied to claim 8 above, Maebayashi et al.

teaches/discloses the means to check the pre-existing and "current version"

firmware against the "new" version of the firmware (Maebayashi et al., col. 14,

lines 45-50).

As per claim 11, as applied to claim 8 above, Maebayashi et al. does

disclose the checking of the "target controller module" for the "proper firmware"

by means of detection of an error condition (Maebayashi et al., col. 15, lines 49-

55).

f.       Claim 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Maebayashi et al., in view of Stupek et al., and further in view of the ANSI X3.131-1994

standard.

As per claim 12, Maebayashi et al. teaches/discloses the system

comprising a "storage media" for "holding different versions" of firmware

software (Maebayashi et al., col. 16, lines 19-23);

Maebayashi et al. does not expressly disclose a "utility program" to

download a firmware update. However, Stupek et al. discloses the addition to a

system of a means to download a firmware software version for a targeted

controller (Stupek et al., col. 4, lines 34-38). Thus, at the time the invention was

made, it would have been obvious to a person of ordinary skill in the art in order

to retrieve from a networked source and store the different versions of the

firmware software package(s) of Maebayashi et al. one would require a means to

download said firmware software package as is present in Stupek et al. One of

ordinary skill in the art would have been motivated to do this in order to affect the

retrieval of a firmware update if the operation of the means of accumulating

firmware versions for a targeted controller was through a worldwide set of

networked computers (the World Wide Web);

Maebayashi et al. also does not expressly disclose an "inquiring" means

for a target control module. However, the ANSI X3.131-1994 standard discloses

the INQUIRY command (ANSI X3.131-1994 standard, clause 8, section 2.5)

whereby a targeted controller could be identified and the firmware requirements

disclosed. Thus, at the time the invention was made, it would have been obvious

to a person of ordinary skill in the art to use the INQUIRY command of the ANSI

X3.131-1994 standard to query the targeted SCSI controller because that is the

SCSI standard of the ANSI X3.131-1994 standard when a SCSI controller is

present on the system of Maebayashi et al. One of ordinary skill in the art would

have been motivated to do this in order to have the targeted SCSI controller

respond in a manner appropriate to the ANSI X3.131-1994 standard that specified

its proper query and response patterns;

Maebayashi et al. teaches/discloses a means for "fetching . . . the

appropriate firmware file. . . ." (Maebayashi et al. col. 10, lines 35-44);

Maebayashi et al. also teaches/discloses the "selecting" of and storage in of firmware software in the storage media (Maebayashi et al., col. 11, lines 52-54);

Maebayashi et al. also teaches/discloses the downloading of the modified firmware software to the targeted controller (Maebayashi et al., "transferred", col. 12, lines 64-67).

As per claim 13, as applied to claim 12 above, Maebayashi et al. also teaches/discloses the use of version "checking" of the firmware software (Maebayashi et al., col. 14, lines 45-50).

g.      Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Maebayashi et al. in view of the ANSI X3.131-1994 standard.

As applied to claim 14, Maebayashi et al. does not expressly disclose the means for initiating a SCSI INQUIRY command. However, the ANSI X3.131-1994 standard discloses a means of querying a SCSI controller via an INQUIRY command in the form of modified Command Descriptor Block (ANSI X3.131-1994, clause 8, section 2.5). Thus, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the INQUIRY command of the ANSI X3.131-1994 standard for querying a SCSI controller of Maebayashi et al. One of ordinary skill in the art would have been motivated to do this for the reason that a non-standard INQUIRY command, not compliant w/ the ANSI X3.131-1994 standard, would only be usable in a proprietary SCSI

controller and not with the broad number of ANSI X3.131-1994-compliant SCSI

controllers and peripherals;

Maebayashi et al. also does not expressly disclose the mean to query a

targeted controller with information from a Page Control Field. However, as per

the ANSI X3.131-1994 standard, setting the enable vital product data (EVPD),

"shall return the optional vital product data specified by the [P]age [C]ode

[F]ield" (ANSI X3.131-1994 standard, clause 8, section 2.5, ¶ 2) which will

specify what, "page of vital product data information the target shall return (ANSI

X3.131-1994 standard, clause 8, section 2.5, ¶ 4 and clause 8, section 3.4, ¶ 1).

Thus, at the time the invention was made, it would have been obvious to a person

of ordinary skill in the art to use the ANSI X3.131-1994 standard EVPD produced

by the ANSI X3.131-1994 standard INQUIRY command with a specific Page

Code Field set to obtain the information necessary to "query a designated target

control module" of Maebayashi et al. One of ordinary skill in the art would have

been motivated to do this in order ascertain the proper firmware version to be

placed on the targeted SCSI module;

Maebayashi et al. also does not expressly disclose the means of enabling

access to the firmware page number of a given target controller. It would have

been clear that the elements of the EVPD data structure would enable access to

and acquiring a firmware page number and a firmware version number for said

target control module;

Maebayashi et al. teaches/discloses the "downloading" of the firmware

data via a modification data storage (Maebayashi et al., "transfer", col. 12, lines

55-59);

Maebayashi et al. also teaches/discloses the "passing" of firmware data to

a target control module (Maebayashi et al., "transferred", col. 12, lines 64-67);

As per claim 15, as applied to claim 14 above, Maebayashi et al.

teaches/discloses the means to "sense" when a SCSI INQUIRY command fails

and sets the sense key to ILLEGAL REQUEST (Maebayashi et al., "detects", col.

18, lines 48-51).

## *Conclusion*

4.      The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure. Gilbert (USPN 5,590,356) relates to the use of and knowledge in the art of memory

allocation and sizing programming language functions (Gilbert, col. 22, lines 19 – 22; col. 26,

lines 39 – 42; and col. 30, lines 24 – 27). The Microsoft Computer Dictionary is replied upon for

standard definitions of the "World Wide Web" and the "Internet" ("Microsoft Press Computer

Dictionary, 3rd Ed.", Microsoft Press, 19 Sep 1997). Stroustrup is replied upon to show the

inherent ability of a programming language (in this case C++) to declare and initialize a multi-

dimensional array ("C++ Programming Language, 3rd Ed.", Stroustrup, Bjarne, Addison-Wesley,

1997). The FreeBSD Hypertext Man Pages are relied upon to show the return values for the

BSD (Berkeley) sockets **recv()** and **read()** functions ("FreeBSD System Calls Manual – recv"

and "FreeBSD System Calls Manual – read", FreeBSD Foundation,

http://www.freebsd.org/cgi/man.cgi). The classnotes for Cet556 by Tim Lindquist of Arizona

State University are relied upon to show the ubiquitous nature of BSD (Berkeley) sockets in

networking applications ("2.c.5 Sockets Context and History", Lindquist, Tim, Arizona State

University, http:// pooh.east.asu.edu/Cet556/ClassNotes/Serial/cnSerialThreadSocket-

17.html#pgfId-176687). The BSD Sockets paper of Chris Hafey is relied upon to show the use

of the recvfrom() and read() functions in the context of a BSD (Berkeley) sockets connection

("BSD Sockets", Hafey, Chris, www.ecst.csuchico.edu/~chafey/prog/sockets/sinfo1.html).

5.      **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to David A Snyder whose telephone number is (703) 305-7205.

The examiner can normally be reached on Monday - Friday from 9am - 5pm Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Greg A Morse can be reached on (703) 308-4789. The fax phone numbers for the

organization where this application or proceeding is assigned are (703) 746-7239 for regular

communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 305-3900.

dAs
November 25, 2002

GREGORY MORSE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100